

Fig.2

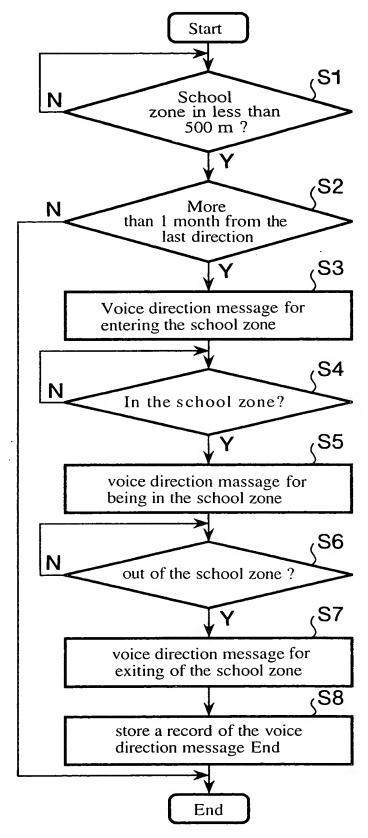


Fig.3

| Setting for the voice direction shout facilities |
|--|
| output every time |
| output sometimes |
| output regularly |
| once in (how many) times |
| once in (how many) weeks |
| output irregularly |
| |

Fig.4

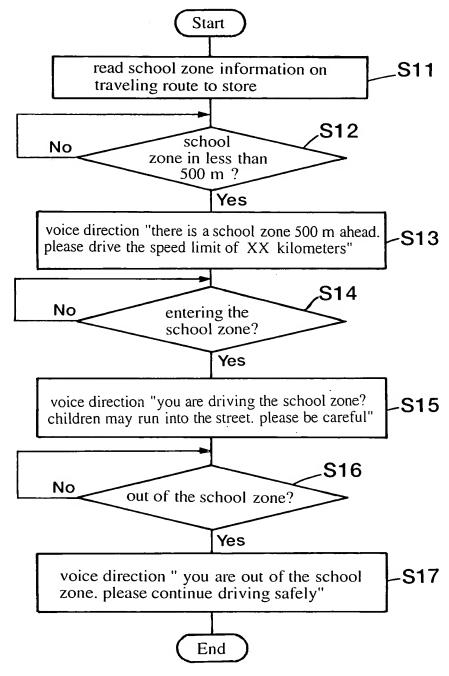


Fig.5

| School zone No. | School name | address | school days | time zone | Speed Limit |
|--------------------|-----------------------|--------------------------|----------------------------------|---|-------------|
| 1 | OOelmentary school | ~state~county OOcity | Jannary 8,9,10 February 1,2,3 | Jannary 8,9,10 Mon~SatAM8:00~9:00 February 1,2,3 Mon~SatPM2:00~4:00 | 20Km/h |
| 2 | ∆∆middle school | ~state ~county △△city | Jannary 8,9,10 February 1,2,3 | Jannary 8,9,10 Mon~SatAM7:30~8:30 February 1,2,3 Mon~SatPM3:30~5:30 | 30Km/h |
| င | XXelmentary school | ~state~county XXcity | Jannary 8,9,10 February 1,2,3 | Jannary 8,9,10 Mon~SatAM8:00~9:00 February 1,2,3 Mon~SatPM2:00~4:00 | 15Km/h |

Fig.6 Start read school zone information on **S21** traveling route to store **S22** No school zone in less than 500 m? Yes voice direction "there is a school zone 500 m ahead. please drive the speed limit of XX **S23** kilometers" **S24** Yes vehicle speed $\leq XX$ km No output deceleration command signal **S25** and give voice direction thereof S26 No entering the school zone? Yes voice direction "you are driving the school zone? children may run into the street. **S27** please be careful" **S28** No out of the school zone? Yes **S29** voice direction "you are out of the school zone. continue driving safely" End

68 0 liquid crystal Ŕ remote control **DVD-ROM** driver disply 5 communication • ROM • RAM • VRAM storage portion interface ,22 \sim 20 , 23 ,2 46 image processor continuous driving detection means driver change detection means monotory driving detection means CPU 12 device main body \sim 15|sensor signal processor voice recognition voice processor portion $\frac{1}{\infty}$ direction sensor 3~ various sensors vehicle speed microphone speaker sensor 19~ 2

communication

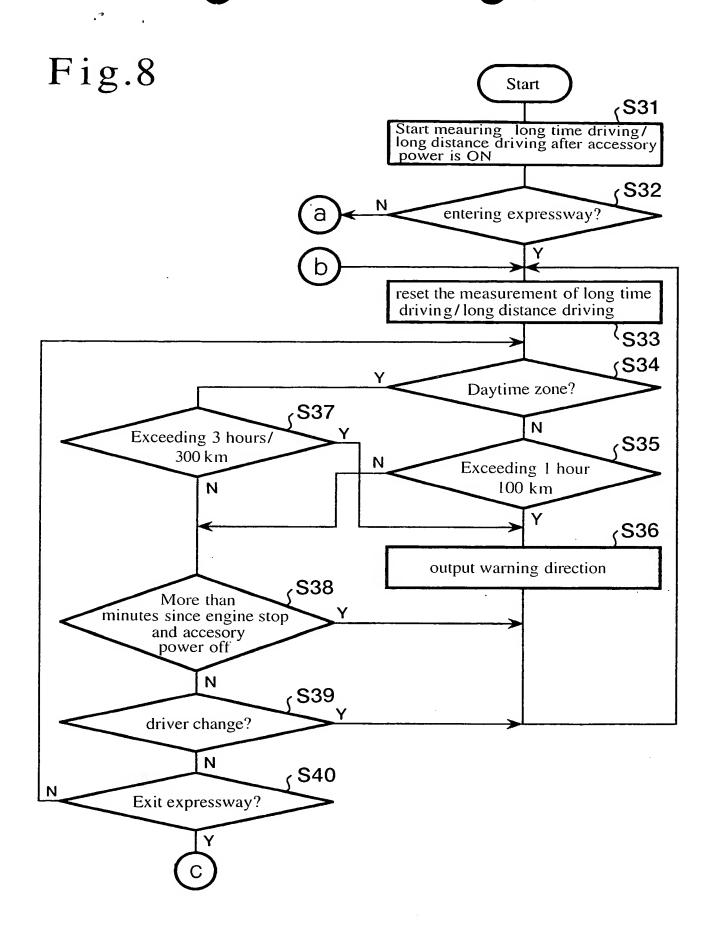
externlal

controller

GPS receiver

 ∞

Fig.7



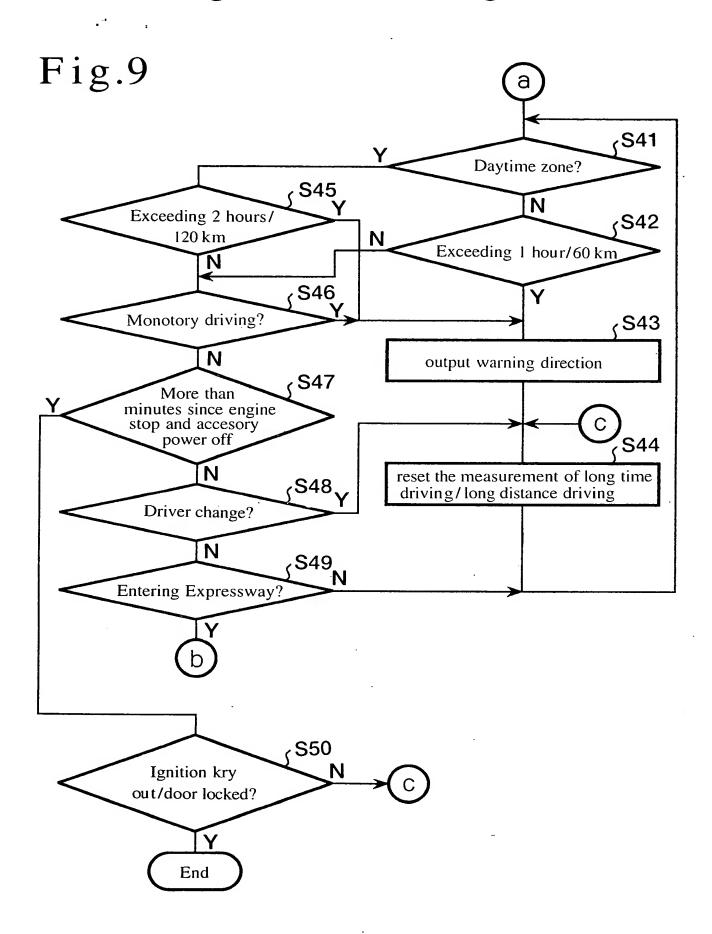


Fig.10

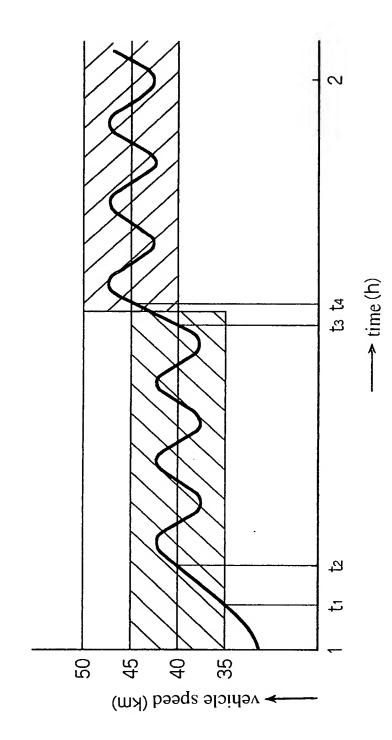


Fig.11

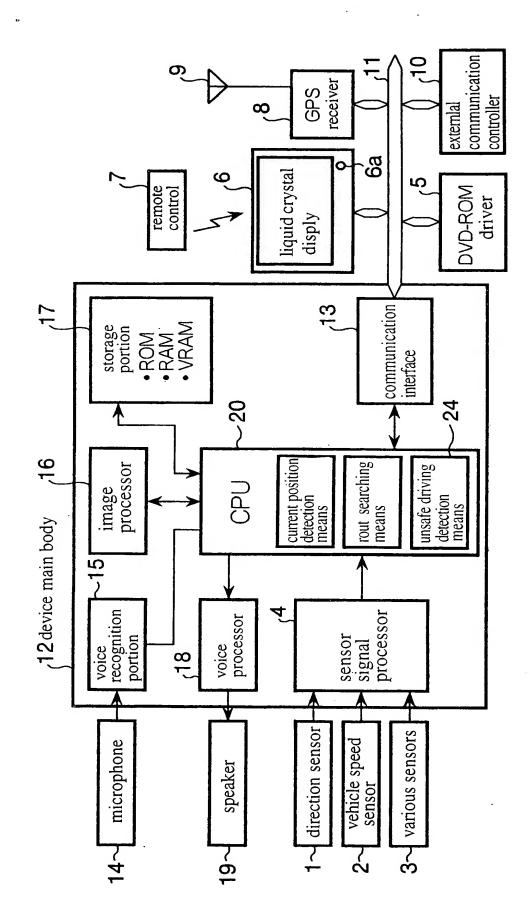


Fig.12(a)

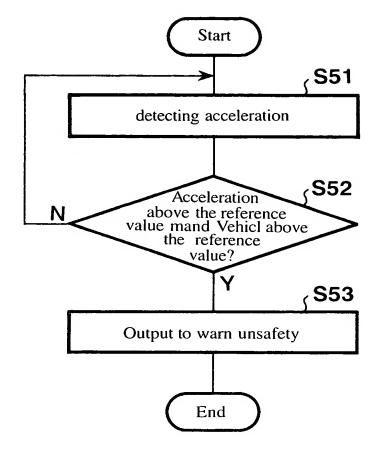


Fig.12(b)

| Acceleration ±G | Vehicle speed V |
|-----------------|-----------------|
| G≧G1 | V≧V 1 |
| G≧G2>G1 | V≧V2>V1 |
| • | • |
| G≧Gn>Gn-1 | V≧Vn>Vn-1 |

Fig. 13(a)

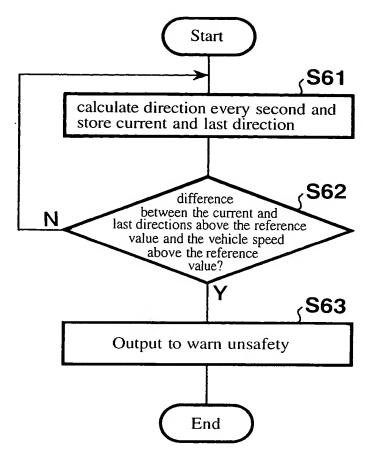


Fig.13(b)

| Direction difference Θ | Vehicle speed V |
|--------------------------------------|-----------------|
| θ≧θ1 | V≧V1 |
| $\theta \ge \theta$ 2 < θ 1 | V≧V2>V1 |
| • | • |
| $\theta \ge \theta n < \theta n - 1$ | V≧Vn>Vn-1 |

Fig.14

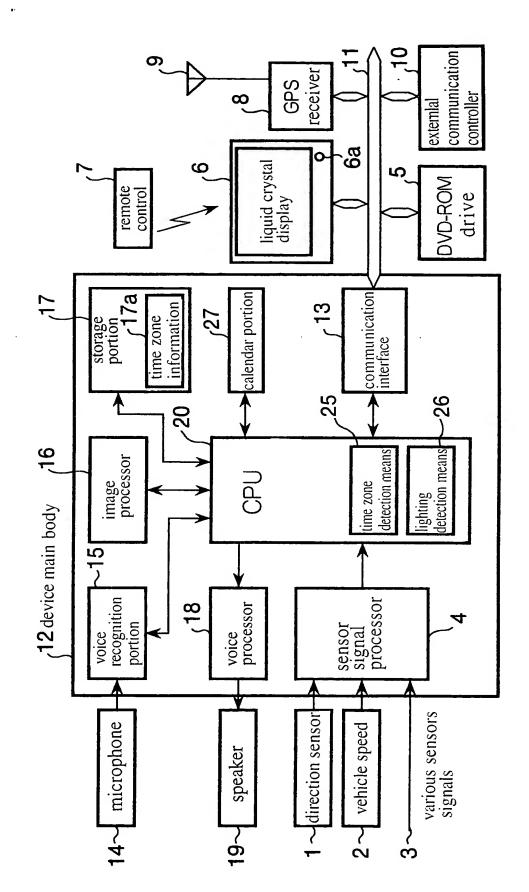


Fig. 15

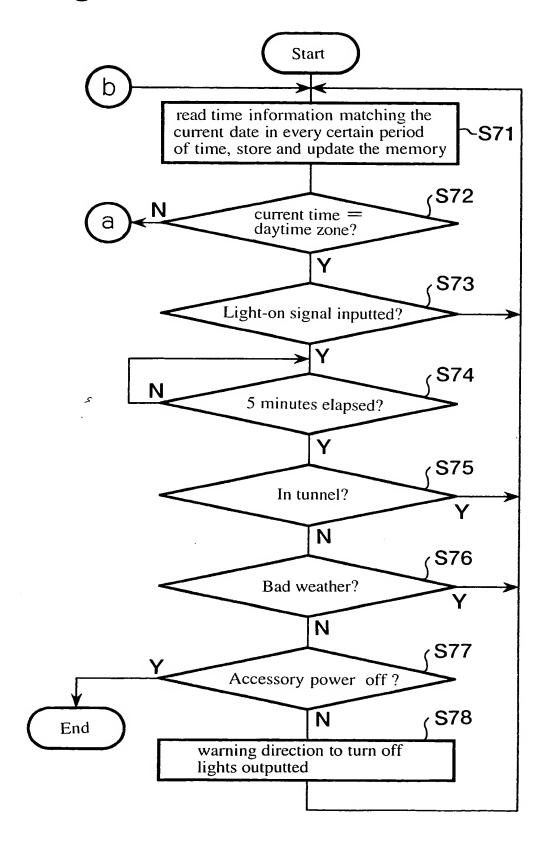


Fig. 16

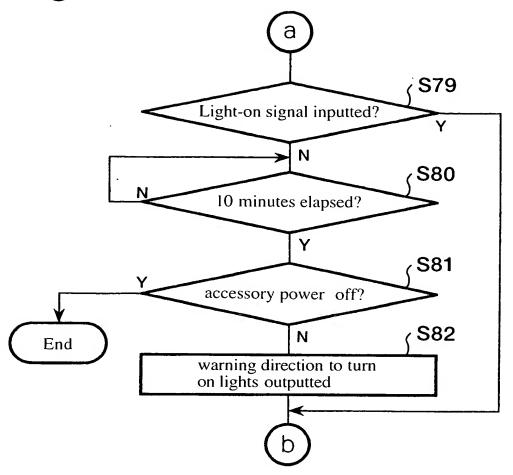


Fig. 17

| | 17a |
|-----------------|-------------------------------|
| Longitude Lo | 139 <lo≦140< th=""></lo≦140<> |
| Latitude La | 34 <la≦36< th=""></la≦36<> |
| Date | Dec.15~Jan.5 |
| Time zone | AM6:50~PM4:30 |